ABSTRACT TITLE

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Background: Food insecurity (FIS), the limited or uncertain availability of nutritionally adequate and safe foods, is associated with risk for hunger, poor nutritional status, and related health problems. FIS may be associated with disordered eating and limited access to a varied diet. Obesity is associated with chronic conditions including high blood pressure, diabetes and heart disease. This study describes patterns of FIS among California women in 1999 and tests the relationship between FIS and obesity as identified by body mass index (BMI; kg/m^2).

Study Question: Was there an association between FIS and obesity among California women in 1999?

Methods: Data were obtained from the 1999 California Women's Health Survey (CWHS). 4,163 California women aged 18 y and over were randomly selected and interviewed anonymously by telephone. FIS was evaluated using a subset of 6 questions from the USDA Core Food Security Module. FIS was identified by 2 or more affirmative responses and FIS with hunger was identified by 5 or more affirmative responses. Four BMI categories were identified: underweight (<18.5), normal weight (18.5-24.9), overweight (25.0-29.9) and obese ($\geq$30). Logistic regression, controlling for characteristics related to obesity including income level, race-ethnicity, age, education, marital status, country of birth and physical activity, was used to identify the relationship between food insecurity and BMI $\geq$ 30. All analyses are weighted for discrepancies in age and race between the CWHS sample and the California female population. It is important to note that those who do not have a home telephone were not taken into account. Subsequently, this particular population may have a greater chance of FIS.

Results: Food insecurity without hunger was identified for 13.1% of the population and food insecurity with hunger for 7.1%. Almost one fifth (19.7%) were obese, 26.6% were overweight, 50.5% had normal weight, and 2.8% were underweight. The prevalence of obesity was greater among FIS women (31.0%) than among food secure women (17.5%). Multivariate regression analysis revealed that FIS without hunger (OR=1.28; 0.99-1.65) and FIS with hunger (OR=1.59;1.17-2.15) were each associated with increased risk of obesity.

Conclusions: Although counterintuitive, food insecurity is associated with obesity, an important public health problem in California. Further work is needed to clarify the determinants of obesity that are associated with food insecurity, and to develop programs and policies to promote both food security and a healthy weight.

Public Health Implications: Because there are health consequences to FIS, policies are needed to ensure that women have appropriate access to food.